HOW TO RESPOND TO ANTIDUMPING DUTIES? KOREA, UNITED STATES, AND THE REST OF THE WORLD.

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Abstract

This study examines the response of Korean steel firms after being assessed antidumping duties in the United States. The U.S. market represents the second largest export market for Korea (after China), but increased liberalization in the Korean economy since the 1997 financial crisis has strengthened the independence and competitiveness of certain industries and the economy as a whole. Multinational Korean steel firms have encountered highly politicized protection in the U.S. and have had to adjust their strategies accordingly. This study examines traditional alternatives to counter antidumping and other forms of protectionism before reviewing export trade data in affected product groups. The data suggests that there is a positive, yet insignificant, relationship between U.S. antidumping duties and Korean steel exports to an alternative, major export market (notably China) in the year of the affirmative antidumping determination.

I. Introduction

Antidumping, as an impediment to trade, is one of the largest artificial obstacles to a firm's global strategy. While most other forms of protectionism, such as tariffs, quotas, and voluntary export restraints, have been weakened under the GATT/WTO supervision, antidumping has actually boomed since 1980 (Blonigen and Prusa, 2002, p.

251). The increase in antidumping filings may be due to the weakening of other instruments of protection or the fact that until 1980, GATT/WTO did not require antidumping filings to be reported. Regardless of the reason for the increase, antidumping actions have serious ramifications for firms and industries with interests in international markets.

Despite the significance of antidumping to the strategy of the firm, there is relatively little literature in international business on this issue. The *Journal of International Business Studies*, the field's number one academic journal, for example, only has one published article on the subject of antidumping in its 25-years of publishing. There is a limited amount of academic work on how antidumping, and other forms of protectionism, affect the operations of a multinational corporation. Moore (2002) looks at the foreign firm's willingness to provide information to the U.S. International Trade Commission (USITC) in an antidumping duty investigation in a Bertrand Nash setting. Blonigen and Ohno (1997) endorse the idea of a firm provoking antidumping investigations through an artificially inflated amount of exports. Blonigen and Ohno call this "protection-building trade", and introduce it as a weapon for firms to use against rivals foreign rivals. Salvatore (1991) discusses the correlation between increases in foreign direct investment and trade protectionism. Bark (1993) specifically looks at the reaction of firms to an affirmative antidumping filing. In the 1980's Korean electronics firms responded to antidumping by adjusting home market prices. Bark's "The Korean Consumer Electronics Industry: Reaction to Antidumping Actions" is where this paper departs from. Specifically, how do Korean steel firms respond after antidumping duties have been assessed in the U.S. market? I look exclusively at the steel industry as steel

has been by far the most heavily regulated U.S. import from Korea, accounting for eight of the ten antidumping duties issued since 1997.

I will begin this paper in my second section by re-visiting the lessons from Bark's case and similar antidumping cases, such as Japanese televisions. Both cases feature an uncompetitive home market that faced the consequences for foreign success or failure. The following section will discuss the South Korean economy. The examination of antidumping through Korean firms was not by accident. In addition to being a large importer to the United States and a major target of antidumping investigations, South Korea (hereafter referred to as 'Korea') has seen a marked shift in national economic policy. The liberalization of markets and restructuring of the economy, in the wake of the 1997 financial crisis, has been dramatic.

The fourth and fifth section of the paper will focus on the industries and firms in question. I will be dealing with industries that have been found guilty of antidumping through petitions filed in the last seven years. Therefore, Korean steel will be featured predominantly. Eighty percent of the cases from the aforementioned time period involved the steel industry. The U.S. steel industry has struggled into the 21st century, and the sheltering they have received from the U.S. government has been highly publicized. Protectionism has not only been aimed at Korean manufacturers, but all steel imports, as the price for raw materials has climbed. Section four will focus on U.S. protectionism and antidumping in the industry while section five will examine the Korean steel industry. These cases should provide a basis to analyze response to antidumping duties, even when one considers multiple third markets and multiple firms are engaged in the Korean steel industry. The sixth section will review strategic response options to

antidumping charges, as shaped by national policy and economic theory. The seventh section will review the antidumping case portfolio and the eighth section will analyze pricing, market, and volume reactions from the affected industries. The ninth section will discuss the findings.

II. Korean and Japanese Consumer Electronics Industry

The two aforementioned cases are unique, but share similarities. I will begin with the Korean case. From 1973 until 1989, nine of fifteen antidumping cases against Korean consumer electronics industry firms worldwide resulted in duties; two of the nine were from the United States (Bark, 1993, p. 127). During this time, Korean firms faced a disproportionate amount of antidumping charges to their share of world exports, mostly as a result of their controversial national development economic plans. To expand income and technology, the Korean government invested in new industries through direct subsidies, tax exemptions, accelerated depreciation allowances, and preferential loans. In addition, there was a restriction on imports of consumer electronics until 1982, from which point each import required a 'recommendation' from the Korean producers association (Bark, 1993, p. 122). Bark reminds us that although there are 150 firms in this industry, there are three conglomerates which dominate the industry[1]; Samsung Electronics Co., Ltd., Daewoo Electronics Co. Ltd., and Gold Star Co. Ltd. (a member of the LG family).

[1] Daewoo, LG, and Samsung accounted for 93.5% of the consumer electronics market in 1987 according to the World Technology Evaluation Center at Loyola College, Baltimore, Maryland.

The first antidumping duties were imposed against color television sets from the three top firms in 1983 by the U.S. and other Western countries (including Australia and the European Community). The aim of the industry was to avoid a continuation of these duties upon review of the initial affirmative antidumping act. Due to the circumstances in the home market, the Korean firms decided to lower their prices in Korea in order to avoid antidumping duties. Raising prices in the U.S. market would have meant pricing themselves out of the market. They therefore took advantage of their significant dominance and protection in the home market, which accounted for only one-third of their global sales.

According to Bark, export prices for color television sets had been falling in the early 1980s before the imposition of the antidumping duties. The duties did not change the trend as export prices fell by 6 percent from 1983 to 1984 and 12 percent more by 1988. Meanwhile, home market prices, which were level from a period of 1980 to 1983, began falling after the antidumping order. The decline in home market prices was 19 percent and 30 percent below the 1983 level in 1985 and 1988, respectively. There were similar cases during the 1980s in which the home market prices of other consumer electronics, microwave ovens and cassette recorders, declined after antidumping duties were imposed in an export market.

Just as significant to us as the case and firms' responses are the implications of these cases on the Korean economy. The 1980s marked the beginning of a change toward greater liberalization in the East Asian nation, and this case with consumer electronics made certain issues more evident. First, this case made public in Korea the discriminatory behavior of the industry. The sudden drop in domestic prices (in response

to the antidumping duties) had Korean officials asking why prices were so high before the antidumping duties. Clearly, the oligopolisitc nature of the market allowed for the big three consumer electronics companies to set their prices artificially high. A special hearing was held in front of the Committee on Trade and Industry where the trade minister and executives from Samsung, Daewoo, and Gold Star were criticized. In a marked shift from past practice, the welfare of Korean consumers was put before special interests, and the recommendation of the committee was to lower domestic prices. Second, this case and the complement of other antidumping and countervailing duty cases during the period made it apparent that friction with major trading partners was going to increase so long as the Korean economy remained heavily protected. Korea began import liberalization to reduce friction and also in the interests of decreasing input prices for manufacturers and the welfare of consumers.

The Japanese television cartel of the 1960s and 1970s (Schwartzman, 1993) featured some of the same characteristics as the Korean consumer electronics industry. They include an uncompetitive home market and large discrepancies between home market and foreign market prices.

The marketplace was orchestrated by Japan's Ministry of International Trade and Investment (MITI), which provided advantages to exporting firms and, more importantly, reduced intra-firm competition in export markets. In the home market, MITI, in collusion with the large Japanese *keiritsus* regulated output, inventories, retail and wholesale margins, as well as retail prices (Schwartzman, 1994, p. 89). They were successful largely because of the weak political power of the Fair Trade Commission of Japan and

the Antimonopoly Law (Schwartzman, 1994, p. 75). In the export market, the Japanese firms colluded to reduce costs by limiting competition to non-Japanese firms. MITI established a Five-Company Rule and Antiraiding Rule, both of which maintained the status quo for Japanese firms selling in the U.S. market by placing strict limits on the seller and buyer (Schwartzman, 1994, p. 95). Japanese firms could not compete for each other's customers and the U.S.-based customers could only go through one Japanese firm per most contracts.

The large price discrepancies between the home market and export market were a result of successful collusion by the cartel in the Japanese home market. Excess capacity from monopoly profits in the home market was used to expand capacity in the United States. This would not have been the first time that a Japanese industry had used this tactic, or the idea of "sacrifice exports" to compete overseas. During the 1950s, evidence shows that the Japanese sewing manufacturers deliberately took losses in order to raise their level of exports by 50 percent in the following year (Schwartzman, 1995, p. 93). Schwartzman recognizes that collusion in the home market means that dumping is more likely in the foreign market, but he acknowledges how the *Matsushita* case asked the reverse. More specifically, does dumping in an overseas market imply collusion in the home market? As a major point of contention for the two aforementioned cases; this is a question that, if true, implies a probable response strategy option for antidumping duties. Therefore, I will return to this question during my discussion of response strategy options, in section six.

At the end of the "cartel" case, which may be better known as *Matsushita v. Zenith*, the U.S. and Japan negotiated a bilateral agreement that included voluntary export restraints and orderly marketing agreements. Antidumping duties did not result.

Overall, the Japanese and Korean cases are relevant to this study because they both demonstrate the significance of national economic policy and formal institutions to firm decisions in alleged dumping and antidumping duties. The consumer electronics case represent a case where there was a highly uncompetitive home market, government support to exporting firms, and a system at trade administration for selecting "winners" and "losers" to promote as a flag-carrier firm. MITI began subsidizing "favored" firms before the end of U.S. occupation (Schwartzman, 1994, p. 9). Just as in Korea, the successful Japanese firms received preferential loan treatment, in this case from the Bank of Japan.

III. Liberalization of the Korean Economy

Since the end of the Korean War, the Korean government has continually adapted the national economic policy to changing external conditions. Unfortunately for the Koreans, they lacked natural resources and a strong economic base from which start from in the 1950s. Therefore, Korea pursued an export promotion and infant industry protection through an import substitution policy (Lee, Choi, and Kang, 2001, p. 51). The Korean export regime had a system for supporting the efficient firms over the less successful ones (Choi, 2002). Import permits and quotas for upstream products were linked to export performance.

Korea's protection of infant industries and investment in education meant that capital and skilled labor became abundant. Heavy industries, such as steel, are skilled-labor intensive and capital intensive, and thus a larger share of exports began to shift to these sectors (Song, 1996). With their history of the unresolved armed conflict with the North Korea, this economic shift was in also in the best national security interests (Choi, 2002). The percentage of exports in the heavy and chemical industries increased from 12.8% in 1970 to 55.2% by 1990 and in 2000 stood at 80.8%. Meanwhile, agricultural and light industrial products have both fallen to below 25% of their 1970 level of percentage of export volume (Korean International Trade Association (KITA), Choi, 2002, p. 15).

These policies resulted in significant gains for the Korean economy. The share of trade in the national income jumped from 53.2% to 72.7% from 1990 to 2000, according to the Bank of Korea. Korea also ran a sizeable surplus against the United States up until the 1990s.

Naturally, pressure came from international organizations and trading partners for Korea to begin to liberalize. This was the first of many triggers that saw the government liberalize some sectors of the national economy. Other factors that accelerated this liberalization include the 1995 Uruguay Round, the 1996 accession to the OECD, and the 1997 Asian financial crisis. Korea has since exceeded OECD liberalization levels, further increasing the amount of foreign investment into the country (Kim and Kim, 2001).

Since the creation of the WTO in 1995, free trade agreements and expansion of trade into new markets has exploded. There were 200 free-trade agreements in the year

2000. Korea has been able to enjoy these benefits. As a result of the creation of the WTO and the Uruguay Round discussions, Korean firms were able to diversify their export markets (Choi, 2002, p. 38) from non-tariff barriers were broken down in emerging markets. One such market is China. Korean firms view the accession of China to the WTO in 2001 as bittersweet. Although Korean enterprises will be able to enjoy the fruits of an emerging, large, and more open export market, they are apprehensive about having to compete directly with Chinese manufacturers in third markets. In the last four years, Korean exports to China have increased an average annual growth rate of 40.3% to the point where mainland China (excluding Hong Kong) represents 27% of their exports, up from only 11% in 1998 (KITA, 2005). In addition to China, a larger proportion of Korean exports are going to non-traditional export markets, such as the Middle East, and away from the dominant export markets (Asian or North American markets) after the 1997 Asian financial crisis than before. This shift may represent a diversification in global strategy for most Korean firms. (Yang and Kim, 2000).

Liberalization of the markets and greater access to new foreign markets only represents part of the structural changes to the national economy. There has been significant restructuring of government and business relations in Korea. In 1993, the Korea Fair Trade Commission acted on the nation's seldom used antitrust laws. Six unfair trade practices were targeted in an investigation of 574 firms linked to 30 *chaebols* (Jwa, 2001, p. 89).

Similar to the opening of markets, a significant amount of restructuring was set in motion by the 1997 financial crisis, when *chaebols* were criticized for having too much power. Reform was mostly dealt with stripping the *chaebols* of this disproportionate

amount of power they wielded in the national economy. Cross-ownership and cross-debt guarantees were banned in March 2000. The holding company system was also removed, however it was then reintroduced the following year, albeit under a very restricted version (Jwa, 2001, p. 89).

Some critics of the reforms argue that because of the volatile nature of Korea's sunrise and sunset industries, it is difficult to implement effective policy chance (Choi, 2002, p. 50). And, reminiscent of past Korean economic plans, special benefits, such as tax breaks and easier credit access, were extended to selected firms that could help revive the economy, which depends heavily on international economic conditions (Jwa, 2003, p. 85). Consequently, the restructuring of the Korean economy after the Asian financial crisis has been a source of trade tension, especially with the United States. The foreign perception, especially held in the United States, is that the Korean government would "unfairly" subsidize Korean exports with IMF and other international funds. (Yang and Kim, 2000, p. 41). Yang and Kim go on to note that some discontent among U.S. Congressmen in districts with large steel and automobile and semiconductor industries still exist.

IV. U.S. Steel Protectionism

Of the ten U.S. antidumping petitions ending in duty orders and filed and completed against Korean firms between 1998 and the end of 2004, eight of them

involved the steel industry.[2] The other two cases concerned polyvinyl alcohol and polyester staple fiber. These cases represent all petitions filed after January 1, 1998 that reached an affirmative final decision by the U.S. ITC. It should be no surprise that eighty percent of the most recent duties are in the steel industry, as that is one of the most contentious industries in the United States, especially with regards to imports.

There is no denying that the U.S. steel industry was heavily affected by the Asian financial crisis. In the wake of the financial crisis, East Asian governments did two things to strengthen the worldwide competitiveness of their national steel industry against the U.S. industry. Governments, such as Korea's, provided short-term financial support to steel; a heavy industry that the government hoped would jump start the economy, and the government, in compliance with international loans, worked to restructure key industries such as steel. However, Korea had been responsible for only a small percentage of the fluctuation in the U.S. steel markets in the five years following the crisis. Korean imports were equal to only 44% of Japanese imports responsible for the surge in imported steel in the United States in 1998. U.S. steel industry has historically lobbied and obtained protection from imports. Moore describes the steel industry's strategy in obtaining trade protection as follows:

> "A common aspect of these episodes has been that the integrated steel sector has secured intervention outside the normal administrative protection procedures of US trade law. The standard steel industry approach is to use, or threaten to use, the relatively nondiscretionary AD and CVD (countervailing) processes as a

[2] In my paper, I have classified all of the products based on the first six numbers of the Harmonized Tariff Schedule (HTS) of the United States. Of the eight steel cases, seven cases dealt with products in Chapter 72, iron and steel, and one case had a product in Chapter 73, articles of iron and steel. The other two cases of polyvinyl alcohol and polyester stable fiber come are in Chapter 39 and Chapter 55, respectively.

> lever to obtain an agreement providing some degree of US price stability. First, integrated steel producers (often with close cooperation of the [United Steelworkers]) file massive petitions under US trade remedy laws, especially AD and CVD (countervailing duty) petitions. Such petitions have made successful litigation likely. Parallel to the trade remedy cases, congressional supporters of the steel industry propose quota legislation inconsistent with the General Agreement on Tariffs and Trade (GATT). Before the quasi-judicial administrative protection process can grind to completion and prior to final votes on the legislation, the executive branch will urge steel industry to accept a negotiated settlement with foreign exporters, usually a voluntary-restraint agreement. In essence, the rules-based administrative protection procedures have been utilized as a credible threat to force political settlements on trade disputes." (Moore, 1996, p. 74-75)

Yang and Kim point out that Moore's characterized strategy was played out with protection of steel during the late 1990s and the turn of the century. After Congress passed an import quota bill that was "against the rules and principles of the WTO" (Yang and Kim, 2000, p. 49), President Clinton and commercial attaches visited with Korean industry and political leaders to apply pressure on the Korean steel industry. The U.S. executive branch had multiple requests, including:

- Elimination of "market-distorting" subsidies and support to Hanbo Iron and Steel and Dongkuk
- The complete privatization and severing of all governmental ties to Pohang Iron and Steel Company (POSCO)

- Assurance that the Korean steel sector operates on a "market-driven basis"

In response, the Korean government of Kim Dae-jung pledged to privatize POSCO, as the government had already begun to sell off their remaining 33% share in late 1998[3].

In 1999, total and Korean steel imports to the United States declined by 22 and 26 percent, respectively (KITA, 2005). Despite the decline of steel imports to 'pre-crisis' levels, U.S. steel firms continued to lobby for additional support. Four antidumping petitions were filed during 1999 and 2000 by U.S. firms against Korean steel firms such as POSCO, Hanbo, and Inchon Steel. Each of them resulted in an affirmative final decision. The U.S. is not alone in building barriers to Korean steel. As of March 2003, eleven nations had trade restrictions against Korean steel. The U.S. does command a significant proportion of the trade restrictions, 21 of the 42 standing worldwide, but Canada accounts for six restrictions while China and Thailand have two each (Chart 1). Of the 21 American trade restrictions on Korean steel, thirteen are in the form of an antidumping duty. As an official of KOSA noted, "import restrictions on steel products were a 'monopoly' of advanced nations in the past, but lately, developing nations such as China and Thailand have taken protectionist steps"[4]. We will revisit the emerging protectionism of heavy industries later in this paper.

Returning to the U.S., decisive protectionism under the executive branch has a recurring theme. Under the Bush Administration, in 2001, the U.S. imposed safeguard tariffs against imported steel until they were removed in December 2002.

[3] Office of the Press Secretary, *White House*, 01.07.1999
[4] *Yonhap*, 03.11.2003

V. Korean Steel

In the opinion of some Korean policy makers, the U.S. steel industry is now undergoing the restructuring that Korea was forced to endure after the financial crisis. The recovery strategy included mergers, alliance, modernization of plants, and the bankruptcy of several nonviable firms. As an official in the Ministry of Commerce, Industry and Energy put it, "We have restructured our steel industry better than our competitors and there is really nothing to lose from production cuts"[5]. Perhaps there is truth to this statement coming as U.S. steel simultaneously requests protection. "The search for government protection is an indicator of failure to become internationally competitive" (Rugman and Verbeke, 1989, p. 6). In other words, the protection-seeking firm is limited to selling in the home market.

Equally concerning to the Korean steel industry as U.S. protectionism has been the emergence of Japanese producers in the Korean markets in the late 1990s. Koreans are making their own antidumping claims against Japanese firms, who, Korean industry experts argue, are to blame for the price instability in the global steel market. A three-year comparison, from 1998 to 2000, illustrates the rapid expansion by Japanese steel into Korea. In 1998 Japanese exports to Korea stood at 120,000 tons, only to rise to 1.86 million and 3 million in 1999 and 2000, respectively[6].

Turning our attention to the Korean market, three players dominate the industry. Pohang Steel (POSCO) is Korea's largest firm and the world's fifth largest steel firm

[5] *Asia Times*, 11.29.2001
[6] *Asia Times*, 12.20.2000

with sales of just under $12 billion in 2003. INI, a subsidiary of Hyundai, is the nation's second leading producer of steel, with sales of over $3 billion in 2003. Finally, Dongkuk, the third largest producer on the peninsula, recorded $1.7 billion in sales for the same calendar year[7]. The last few years have been much rosier for the steel industry, as global demand has surged. As a result, import prices of raw materials have increased, forcing firms to continually raise prices for steel. By August of 2004, POSCO had already raised steel prices four times on the year, as shipbuilders in Korea and Asia face a shortage of steel[8].

The above 2003 figures all resulted in record profits as Korean firms are enjoying the boom in demand from the emergence of developing economies. Having assessed the structural changes to the economy, the current trade situation, and the Korean steel industry, I will now turn my attention to the response strategy options that Korean steel could pursue in facing affirmative antidumping duties.

VI. Response Strategy Options

In presenting the response strategy options, I present three alternatives (See Chart 2). First, I will analyze the probability of pursuing the past practice of altering home market prices with non-market forces to recover for adjustments in foreign prices. Second, I will look at perhaps the most conventional response to protectionism, foreign direct investing. Third, I will look at the prospect of shifting the weight of and diversifying the export market portfolio.

[7] Sohn, S.J., *Yonhap*, 01.06.2004
[8] Cho, H.R., *Chosun Ilbo*, 08.19.2004

I am not considering the payment of the antidumping duties as an alternative because I feel that option can be quickly eliminated on the following grounds. The duty negates one firm's original pricing strategy and that is why in the majority of cases imports into the foreign market decrease after the imposition of the duty. In situations where the industry wishes to continue to export to the foreign market, settlements are usually agreed to that involve voluntary-export restraints or export taxes and the antidumping investigation is terminated. In 1986, Canada imposed a fifteen percent tax on exports of softwood lumber as part of a settlement to end an antidumping investigation in the United States. Their motivation was that under these circumstances, at least the revenue would be kept in Canada (Rugman and Porteous, 1988, p. 38)[9].

I will begin my discussion on the first alternative, price collusion, by citing work where Schwartzman (1993) answers the aforementioned question, "Does dumping imply collusion in the home market?", that he poses in his book, *The Japanese Television Cartel*.

> "*Independently* competing oligopolists, not one of which has a dominant share, may also discriminate in price (between domestic and foreign prices), but the margin between the market prices will be much smaller than in the case of a dominant firm or cartel." (Schwartzman, 1993, p. 44)

This proposition implies that we cannot necessarily assume that the Korean firms cited with antidumping duties in the last seven years are colluding to set artificial prices

[9] Regardless, in these cases, an affirmative final decision was never reached, and therefore, they are not in the scope of this paper.

or restrict output in the home market, as compared to over twenty years ago when collusion was much more probable with the Korean consumer electronics industry. I will argue that this is the case, and collusion in the home market is not a likely response. However, there is evidence to contradict my argument, and suggest that collusion is still highly probable.

More specifically, the Korean Fair Trade Commission found nine Korean steel makers guilty in 2003 of fixing prices. Of the nine firms, POSCO was not on the list, however, their two closest competitors, INI and Dongkuk, were both cited. Of the 74.9 billion won fine (65.1 million USD), 41.9 billion was assessed between INI and Dongkuk[10].

Additionally refuting my argument is the theory that an increase in liberalization, such as what we have seen in Korea opening up to foreign investment and imports, increases a firm's incentive to participate in a cartel (Everett, Valentine, and Suslow, 1997, p. 1221). When formerly uncompetitive markets become more competitive, firms that were previously protected may result to collusion for leverage.

However, I believe that Korea's trade policy after the 1997 financial crisis was one that developed firms to be viable in a competitive market. This opposed to a national policy that continues to shelter inefficient, domestic firms, as some proponents of protectionism in the U.S. may believe. Using theory developed by Rugman and Verbeke (1990), I argue that Korea's trade policy formulation during the post-1997 crisis was one that promoted "firm-specific advantages" (FSA), rather than sheltering inefficient producers. POSCO is a good example of a Korean firm that received short-term protection from the government, but not long-term shelter. A nation pursuing an FSA

[10] Kim, Young-hoon, *JoongAng Daily*, 09.30.2003

strategy may favor free trade and will not shelter firms in the long run. Rugman and Verbeke cite three characteristics of a "competent executive bureaucracy" which are essential to "efficient implementation" of strategic trade policy that produce viable free market firms in the long run. First, the bureaucracy must have "extensive industry-specific knowledge" (Rugman and Verbeke, 1990, p. 94). Before the financial crisis, the state was a significant shareholder (greater than 33%) of POSCO; therefore, they possessed substantial knowledge of the industry. Second, the bureaucracy must have the "capacity to identify winning and losing firms" (Rugman, 1990, p. 94). Traditionally, Korea has done a remarkable job targeting successful firms. The restructuring of steel industry and elimination of inefficient firms after 1997 is testimony to this. Third, and finally, the bureaucracy must possess "institutional characteristics that insulate it against pressure exerted by rent seeking firms" (Rugman and Verbeke, 1990, p. 94). This final point is the most difficult to argue in favor of the Koreans, but coercion from IMF loans and trading partners, such as the U.S., established some distance from rent seeking firms who were eventually denied funding[11]. Hanbo is perhaps the best example of the Korean government taking a tougher stance on constraints and illustrates the second and third characteristics of the Korean trade regime. Up until one year after the Asian financial crisis, steel mini-mill Hanbo was allegedly receiving support from the Korean government through the form of subsidies. In 1998 the government stopped supporting or directing support to Hanbo (the firm resultantly failed) and then executed a market-driven sale of the firm's remaining assets. Contrastingly, POSCO was slowly sold off and gradually lost all public ownership, but has since become a benchmark for transparency and efficiency.

[11] Office of the Press Secretary, *White House*, 01.07.1999

The Rugman and Verbeke theory is used to illustrate that, perhaps unlike before the post-Asian financial crisis reforms, Korea had set into place a strategic trade policy that created efficient firms. POSCO is the poster-child of this effective polices. The aforementioned success of the previously state-owned steel company is a testament to the FSAs created under Korea's strategic trade policy during the final year of 1990s, and therefore, the unlikelihood that POSCO and other successful firms would need to engage in cartel activities. As I alluded to earlier in the paper, the Korean steel industry has undergone the painful restructuring that some industry experts believe the U.S. steel firms steel need to undergo to become globally competitive.

Furthermore, considering the current climate of rising steel prices and the history of price collusion in Korea, Korean steel manufactures would find it difficult to collude to fix prices or reduce output. In 2004, supply shortages were so severe in the Korean domestic market that Dongkuk pledged to shift 350,000 tons dedicated to the export market to the domestic market[12]. After the embarrassment of price discrimination by the consumer electronics industry and the restructuring of *chaebols*, the Korean Fair Trade Commission has gained more traction to prevent possible collusion, as the aforementioned case illustrates. Additionally, in the three previous antidumping petitions ending in duty orders against Korean steel, none of them featured POSCO, Dongkuk, or INI as a mandatory respondent. The smaller firms more directly affected by these duties would find it difficult to collude in price fixing in the domestic market without the cooperation of at least one of the three larger firms

Eliminating the past practice of tinkering with discriminatory pricing at home as a viable, long-term strategy response to antidumping, I present the second and third

[12] *Asia Times,* 03.05.2004

alternatives, foreign direct investment, and shifting the weight of and diversifying your export market portfolio.

The relationship between foreign direct investment (FDI) and trade protectionism has been shown to be negative (Salvatore, 1991) or positive (Safarin, 1985), usually depending on the industry. The litmus test may be whether or not the two instruments of global business are complements or substitutes.

In the case of a positive relationship, FDI and trade are complements. This may be the case especially in service industries where there is limited local processing. For example, suppose a foreign airline wishes to do business in the United States. If more flights are allowed to come into the U.S., from less trade protectionism, there will be a probable increase in FDI through sales and other support offices.

The paper is concerned with the case when trade protectionism and FDI have a negative relationship, and can be used as substitutes. This is especially the case in industries with heavy manufacturing. A classic example is the foreign direct investment by Japanese automakers into the U.S. after increased protectionism against auto imports.

Steel firms, worldwide, have shown through their actions that there is enough local processing in the industry to warrant foreign direct investment as alternative to trade. Australian, British, and Japanese based steel firms have all expanded into China recently, where they can manufacture domestically for the foreign auto firms; and other large users of steel, which have moved operations into China. Korean firms, too, such as POSCO, are moving direct investment into China. However, in this analysis, we should distinguish between traditional "tariff-jumping" (or FDI after the imposition of duties) and what Bhagwati calls "quid pro quo" foreign direct investment. Quid pro quo comes

as a result of the fear or threat of increased protectionism in the target market (Salvatore, 1991, p. 94).

The third alternative involves multiple export markets. One could argue that this theory implies abandoning an initial strategy for the target market, which may be the case, but in reality, the firm will have more considerations than a simple two-nation scenario. Under this scenario, Korean steel would increase their exports to a third market, while their exports to the U.S. decrease as a result of the antidumping duties.

There are other motivations to consider rather than the firm abandoning the initial target market. Perhaps, the U.S. is not the initial target market, but Korean firms are only interested in distracting competition away from the true target market. For example, Korean steel may have been attempting to induce antidumping barriers in "protection building trade", a theory put forward by Blonigen and Ohno (1998).

The case of "protection-building trade" suggests that a firm will artificially increase exports to market A in period one to raise trade barriers in market A during period two. The firm investing in additional exports would have incentive for the increased protectionism, which would hurt competitors who are truly interested in market A. While the competition is hampered in market A, the Korean steel firm, who in this model provoked the protectionism in the first place with artificially high exports, will pull out of market A to focus on their true target market. The one flaw in this theory as it applies to my suggested alternative is that firms that undertake "protection-building trade" typically have long-term interests in the market to which they export to and provoke antidumping charges (usually through later FDI). The common response to

"protection-building trade" would be to enter the market through foreign direct investment after increasing one firm's domestic market share through inflated exports.

Regardless of the motivation though, whether it is premeditated competitive maneuver or abandoning the initial target market, this alternative proposes that the Korean steel industry will respond to antidumping duties by altering the diversification in their export portfolio.

VII. The antidumping cases of focus

My eight focus cases are listed in Table 1 with all pertinent information including the petition date, the final order date, the product (in name and HTS code), the firms involved and duties assessed, the export trade data[13], and the U.S. Department of Commerce case reference codes. In addition to the table, I would like to give a brief summary of the case portfolio that I will be examining. Of the eight steel cases seven are categorized under "iron and steel" and one is categorized under "articles of iron or steel"[14].

The time period was chosen because of the significant change in the Korean domestic market after the 1997 financial crisis. Therefore, only antidumping petitions filed on January 1, 1998 or after are included in the portfolio, since those cases would most closely resemble the circumstances currently faced by Korean firms in the post-Asian financial crisis environment. Additionally, I am examining petitions that have reached a final affirmative decision only. The purpose of this paper is to consider how

[13] All trade data is from the Korea International Trade Administration (KITA).
[14] Chapter 72 of the Harmonized Tariff Schedule of the United States consists of "iron and steel". Chapter 73 consists of "articles of iron or steel".

Korean firms respond to U.S. antidumping duty orders, not the petition itself. There is great variation among the products (which have been categorized to the sixth digit of the HTS code) from a $25 million export market in the petition year (2000) for stainless steel angles to a $756 million export market in the petition year (1998) for stainless steel sheet and strip in coils. There is additional diversity in the second market for the respective product groups, China, Japan, Hong Kong, and Canada are each a second market in at least one case each.

VII. Findings

I choose to argue and analyze the strategy response option of a Korean firm refocusing to a second export market (here after , 'Market B', defined as the leading, non-U.S. export market for the said product group in the petition year). In my presentation of response strategy options, this was the third alternative. To test the association between the U.S. antidumping duties and the shifting of exports by the respective industries (or firms of affected industries), I will employ two ordinary least squares linear estimates. One will compare the affected product group's difference in exports, to the U.S. market, the independent variable, and the difference in exports to said product group's Market B, the dependent variable, in the year before the duty to the year of the duty. The second estimator will have the difference of the natural log of exports between the two markets, as the dependent variable, regressed on a trend variable (year) and a dummy variable that will reflect whether the period is an antidumping duty year. Both estimators are shown in

detail below. In addition to the tests, I will look at each product group individually through trend graphs of exports to the U.S. market and Market B.

Equation One

$Y_i = \beta_0 + \beta_1 US_i + \varepsilon$

Y: Change in the export volume (metric tons) of the *i*th product group's exports to Market B from the year before the duty order to the year of the duty order

US: Change in the export volume (metric tons) to the *i*th product group's exports to the US from the year before the duty order to the year of the duty order

Estimates

	Coefficient	**t**	**p**
β_0	15296.9 (15575.36)	0.9821	0.3640
β_1	-0.5191 (0.2080)	-2.4961	0.0468

n = 8
R-squared: 0.5094
Adjusted R-squared: 0.4277

The distribution for equation one is displayed on Chart 5. The sample size is extremely low in this estimation, and therefore does not provide a suitable platform to make any solid assumptions. However, I chose to include this estimator after examining

Equation Two

$Y_T = \beta_0 + \beta_1 T + \beta_2 AD + \varepsilon$

Y: The difference, in year T, between product groups' natural logged exports (metric tons) to Market B and product groups' natural logged exports (metric tons) to the US; [Ln(Exports to Mrkt B_T) – Ln(Exports to US_T)]
T: The year where 1994 is T equal to 1
AD: Dummy variable where in an antidumping duty order year AD is equal to 1, otherwise AD is equal to 0

Estimates

	Coefficient	**t**	**p**
β_0	-6.0957 (0.9800)	-6.2200	1.8E-08
β_1	0.9325 (0.2080)	6.3535	9.98E-09
β_2	0.4342 (1.6143)	0.2690	0.7886

n = 88
R-squared: 0.3325
Adjusted R-squared: 0.3168

the graph on Chart 5. There is a negative relationship between the independent variable and dependent variable. The question that this estimator leaves unanswered however, (because of the simplicity of the equation and the small number of observations) is whether the negative relationship is exclusive to the antidumping cases? Alternatively, it may be the case that non-antidumping years, too, have a negative relationship between different market exports (US and Market B) and that the negative relationship is explained by another variable, time. These important variables were included in the second estimation.

Equation Two illustrates that time, rather than antidumping duties, has a significant relationship with the difference in export volumes to the U.S. and respective Market B for affected product groups. With such a high t-value and very small p-value, we can reject a null hypothesis of $\beta_1 \leq 0$, suggesting that in an additional calendar year; the difference between exports (metric tons) to Market B and the U.S. will continue to expand in favor of Market B. Consequently, the argument that a relationship exists between antidumping duties and a shift in exports is weakened. Although the sign of the coefficient $\beta_2 = 0.4342$ is in the expected direction (where in an antidumping year there is a positive expansion between exports to Market B and exports to the U.S.), the high p-value of .7886 is unconvincing. Chart 6 illustrates the distribution of the observations for equation two.

Next, I will look at a few of these cases individually.

The U.S. export market for Structural Steel Beams (A-580-841) (Chart 7) accounted for 16 percent (190,017 tons) of Korean exports of structural steel beams during the petition year, 1999. Canada, the Market B for this case, consisted of nearly 12

percent (139,600 tons) of Korean exports. In the following year (2000) Canada's import of Korean structural steel beams expanded by 58.8% in volume, to move the nation to a 20 percent share (221,691 tons) of Korean exports by volume. You will notice this was accompanied by a significant price increase in Canada; which meant Canada's increase in imports of steel beams in terms of sales was even larger. The interesting note is that price increases were relatively close in the U.S. and Canada (32 and 27 percent respectively, compared to only 16 percent in non-US markets), yet the increase in Canada was proportionately larger than the increases in all other markets.

I chose to look specifically at Steel Concrete Reinforcing Bars (A-580-844) (Chart 8) because of the heavy dependence on the U.S. market for Korean exporters in this product group. In the petition year of 2000, 73.5 percent (204,574 tons) of Korean exports in steel concrete reinforcing bars went to the U.S. market. 14 percent (40,044 tons) of the market was in Hong Kong, Market B. In the following year, U.S. shipments fell by over 125,000 tons while exports to Hong Kong increased by over 90,000 tons, increasing Hong Kong's share of the Korean export market to 51 percent (131,841 tons). The U.S. share had fallen to 28 percent (73,539 tons). The interesting note in this case is that prices fell by a greater degree in all non-US markets (9 percent) than in Hong Kong (a decrease of 3 percent), yet Hong Kong accounts for well over 75 percent of the increased concrete reinforcing bar exports for the year 2000. Korean exporters were targeting their Market B rather than multiple third markets.

The Prestressed Concrete Steel Wire Strand (A-580-852) (Chart 9) case, also the most recent case to have reached an affirmative antidumping decision, represents one of the two cases in this portfolio where volume to the respective Market B (China)

decreased in the year following the antidumping petition filing in the United States. In this case, the Korean industry responded with an increase in exports, but it was to multiple third markets. While both the U.S. and China experienced a decrease in imports of Korean PS concrete steel wire strand, there was a 7 percent increase in volume and 27 percent increase on sales worldwide. In all non-U.S. markets combined, Korean exports of PS concrete steel wire strand increased by nearly 19,000 tons. The U.S. and China markets, which collectively accounted for 50 percent of exports in the petition year of 2003, saw a composite decrease of 4,000 tons in 2004.

Graphs for all other product groups are available as attachments and are labeled as follows:

A-580-831	Stainless Steel Plate in Coils	**Chart 10**
A-580-834	Stainless Steel Sheet and Strip in Coils	**Chart 11**
A-580-836	Cut-to-Length Carbon-Quality Steel Plate	**Chart 12**
A-580-846	Stainless Steel Angle	**Chart 13**
A-580-847	Stainless Steel Bar	**Chart 14**

IX. Discussion and Conclusions

The examination of Korean steel industry responses to the affirmative U.S. antidumping final decisions was primarily only examined through my third response strategy alternative. The first alternative, price adjustments in the home market, I dismissed in my analysis of strategy options. I will address the second alternative, that of foreign direct investment, further along in this section.

My portfolio of eight steel cases does not conclusively prove my hypothesis in this paper that Korean exporters will, in the face of U.S. antidumping duties, dump their

product to another market by disproportionately exporting to the leading, non-U.S. market. However, I do believe the portfolio and regression equations suggest a relationship between the export markets and raise questions about the strategy of the Korean steel industry.

More specifically, the first and perhaps the most obvious suggestion from the regression analysis, is the positive relationship between the difference in exports to the respective 'Market B' and the U.S. market and time (or a 'negative' relationship between Market B and the U.S. over time). Chart 6 is quite revealing of the upward trend since the mid-1990s.

Second, looking at the antidumping cases, equation one suggests a negative relationship (Chart 5) between exports to Market B and exports to the U.S., although the relationship is not statistically significant when included in a large sample with non-antidumping years. And looking at the cases individually, while some were convincing of a negative relationship[15], the two most recent cases both showed a decrease in exports to Market B in the antidumping year.

There are two questions that I would like to highlight in closing.

First, looking at the two exception cases where exports to Market B decreased and with the assumption that there *is* a significant positive relationship between antidumping duty orders in the U.S. and exports to Market B, is the strategy of Korean firms to diversify their export markets, rather than refocus on a new 'target' market? As I have noted in this paper, scholars on Korean liberalization suggest that Korean firms have had the opportunity to expand and diversify their export markets and have taken advantage of

[15] Cut-to-Length Carbon-Quality Steel Plate (2000), Structural Steel Beams (2000), and Steel Concrete Reinforcing Bars (2001) were the most significant cases reflecting a negative relationship

that opportunity. However, considering the new emerging steel markets, notably China and India, one can easily counter the diversification argument in favor of the 'refocusing' strategy. It is plausible that Korean firms, in the face of U.S. protectionism, have committed more resources to the growing Chinese market. In four of the eight portfolio cases China, the world's largest importer of steel, was Market B. POSCO, who in 2000 produced 27.7 million tons of steel[16], is already planning direct investment into China, and possibly India, as automakers and other manufactures in need of steel relocate operations from Europe, North America, and Japan. As CEO Lee Ku-taek said, "We are already planning to build a production base that can produce 10 million tons a year in foreign countries, such as China and India, within 10 years"[17]. Overall, POSCO is investing $800 million USD into China over the next 10 years[18].

This discussion begs the question of how much influence China's booming steel market has on the upward shift of Equation Two (Chart 6), compared to U.S. antidumping duties (or at least the sense of protectionism), or any other time sensitive variables, and how these variable drive the decisions of Korean firms?

This will allow me to briefly revisit and answer the question of foreign direct investment as alternative for Korean firms in the U.S. The evidence of these cases and the rapidly growing Chinese market suggests that the Korean firm would not respond to the U.S. antidumping duties with FDI in the U.S., where the steel industry is eroding and the domestic demand is much weaker than other markets. The only location Korean firms are presently considering FDI are in the developing economies.

[16] Breckenridge, T., *Cleveland Plain Dealer*, 11.11.2001
[17] Park, H.M., *JoongAng Daily*, 08.17.2004
[18] Brooke, J., *New York Times*, 02.10.2004

Returning to China, I will concede that the booming steel industry is more likely the greater influence on certain cases shifting disproportionate amounts of exports to China. However, I will argue that the issue of antidumping duties in the U.S. versus the historical lack of antidumping instruments in China has played a factor as well. After all, if China had a steel industry as protected as the U.S. steel industry, would the market be as attractive? China had not had its first antidumping case until June 1999 and for at least the first year; all investigations have involved basic commodities rather than heavy industry (Ross and Ning, 2000). The Chinese AD laws have been growing in sophistication each year. As of March 2003, China had set in place three trade restrictions against Korean steel[19]. I do not believe that it is coincidental that the two most recent cases[20] are also the only two cases in my portfolio where export volume to Market B declined in the year of an affirmative antidumping duty. As Chinese antidumping law develops, this complexity will become an area of greater interest for researchers.

Therefore, although U.S. antidumping duty orders did not show a significant direct relationship on exports to other markets in this portfolio of steel cases, I believe it is highly likely that there was an indirect effect from the U.S. antidumping climate, which enhanced the attractiveness of the Chinese market. This is the issue that business executives and exporters will need to address in the future. From this paper, there is an obvious shift (Chart 6) away from the U.S. to other markets for Korean exports, but what is causing that increase into other markets at the expense of the U.S. steel market and how much do the antidumping duty orders account for in the decision making process?

[19] *Yonhap*, 03.11.2003
[20] A-580-852, Final USITC Decision: 01.07.2004, A-580-847, Final USITC Decision: 03.07.2002

Consequently, will Korean exporters choose to refocus on one secondary market, possibly one with a weak antidumping enforcement, or diversify to multiple third markets?

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Chart 1
Trade Restrictions on Korean Steel Industry, Active in March 2003

Country	No. of Restrictions
United States	21
Canada	6
China	3
Thailand	3
Argentina	2
Taiwan	2
Australia	1
European Union	1
Indonesia	1
Poland	1

Source: Korean Iron and Steel Association, March 2003, Breakdown for US (13 antidumping, 5 countervailing, 3 safeguard)

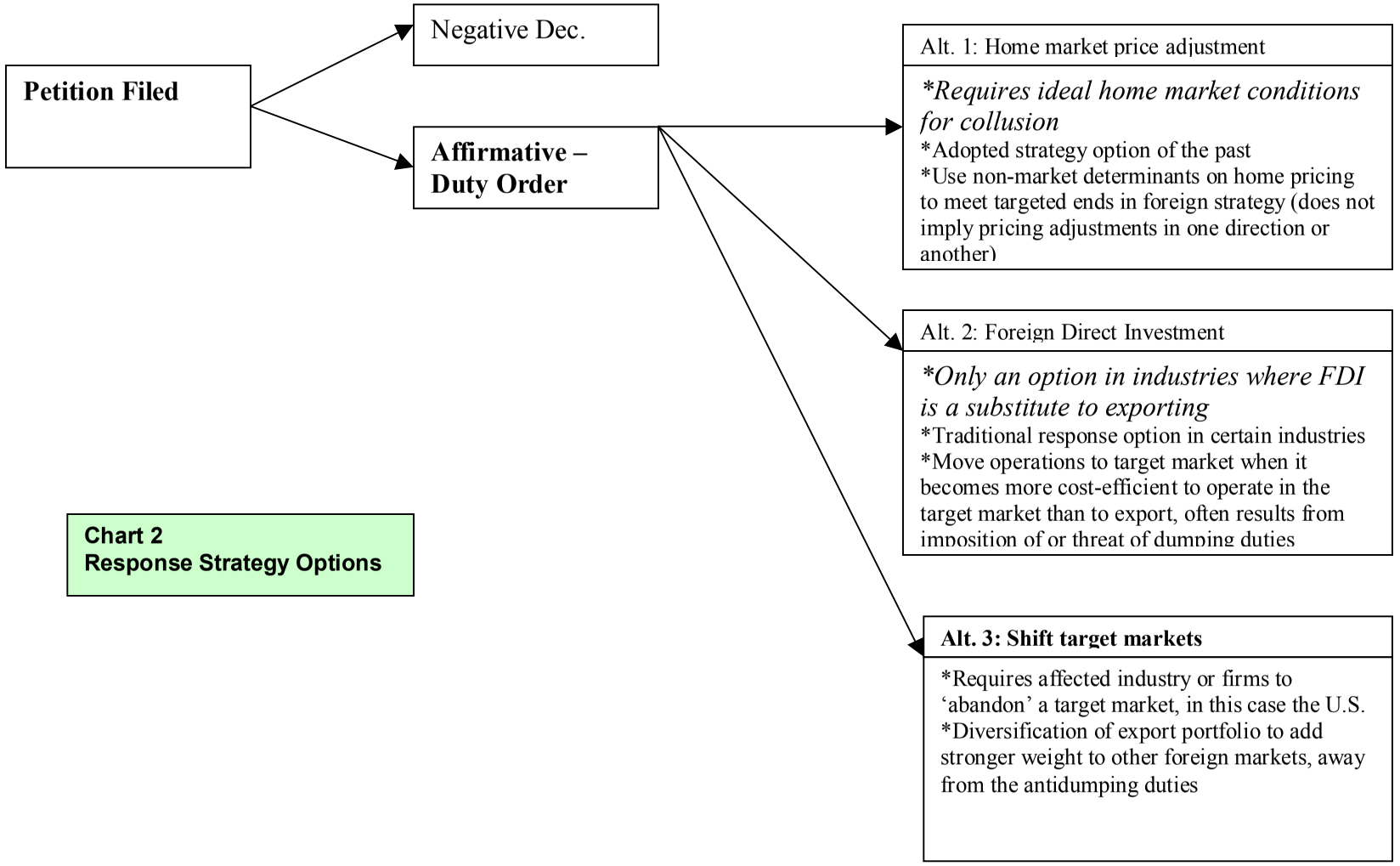


Chart 2
Response Strategy Options

Chart 3 : % change in export volume, petition year to year after

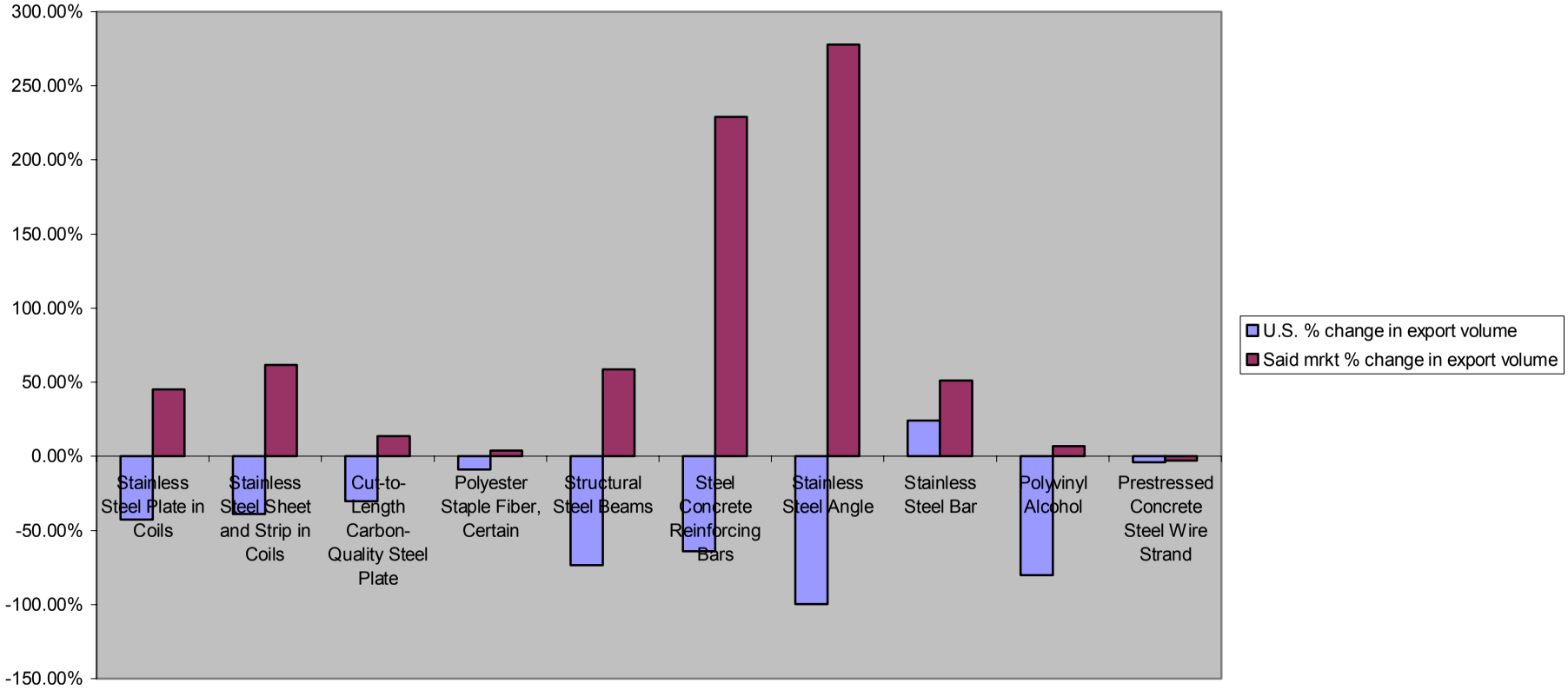


Chart 4
Portfolio - Cases of Affirmative Antidumping Duties, Korea to US

Year of Petition	Product	Largest, non-US market	Size of export market, petition year (US 1000)
1998	Stainless Steel Plate in Coils	China	$100,047
1998	Stainless Steel Sheet and Strip in Coils	China	$756,185
1999	Cut-to-Length Carbon-Quality Steel Plate	Japan	$720,578
1999	Structural Steel Beams	Canada	$276,759
2000	Steel Concrete Reinforcing Bars	Hong Kong	$57,501
2000	Stainless Steel Angle	Japan	$25,632
2001	Stainless Steel Bar	China	$46,944
2003	Prestressed Concrete Steel Wire Strand	China	$362,528

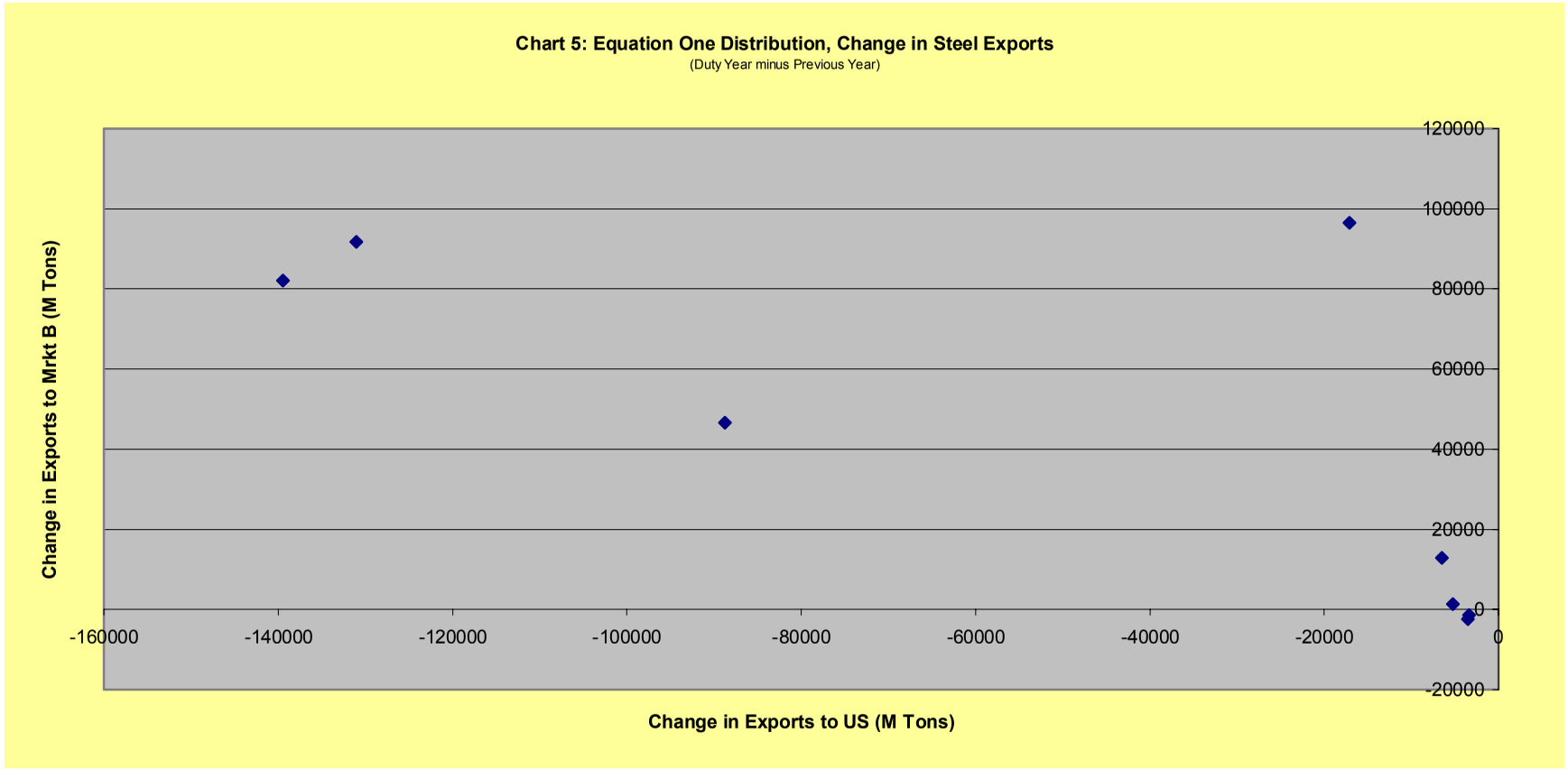


Chart 5: Equation One Distribution, Change in Steel Exports
(Duty Year minus Previous Year)
Change in Exports to Mrkt B (M Tons)
120000
100000
80000
60000
40000
20000
0
-20000
-160000
-140000
-120000
-100000
-80000
-60000
-40000
-20000
0
Change in Exports to US (M Tons)

Chart 6: Equation Two Distribution

Red Circles = AD cases, Blue Diamonds = All other cases

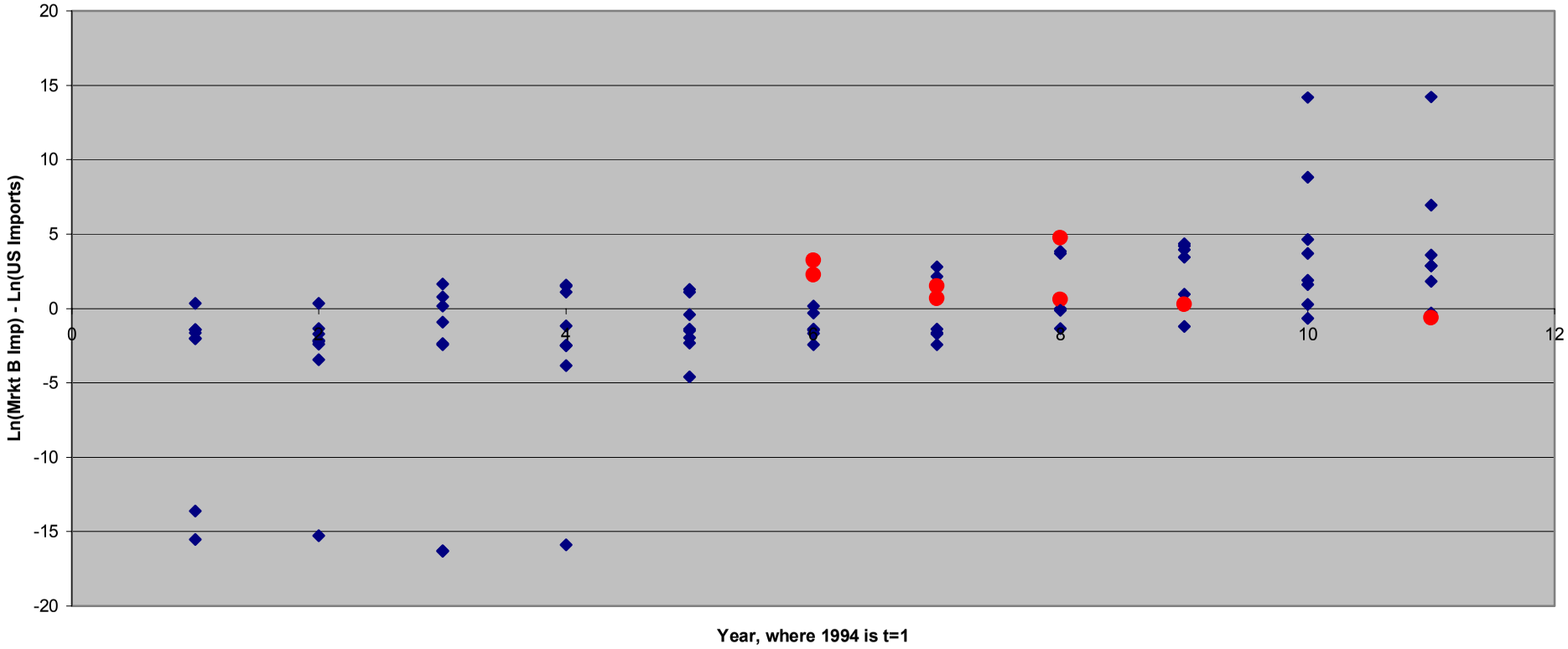


Chart 7: Trend - A-580-841

Structural Steel Beams

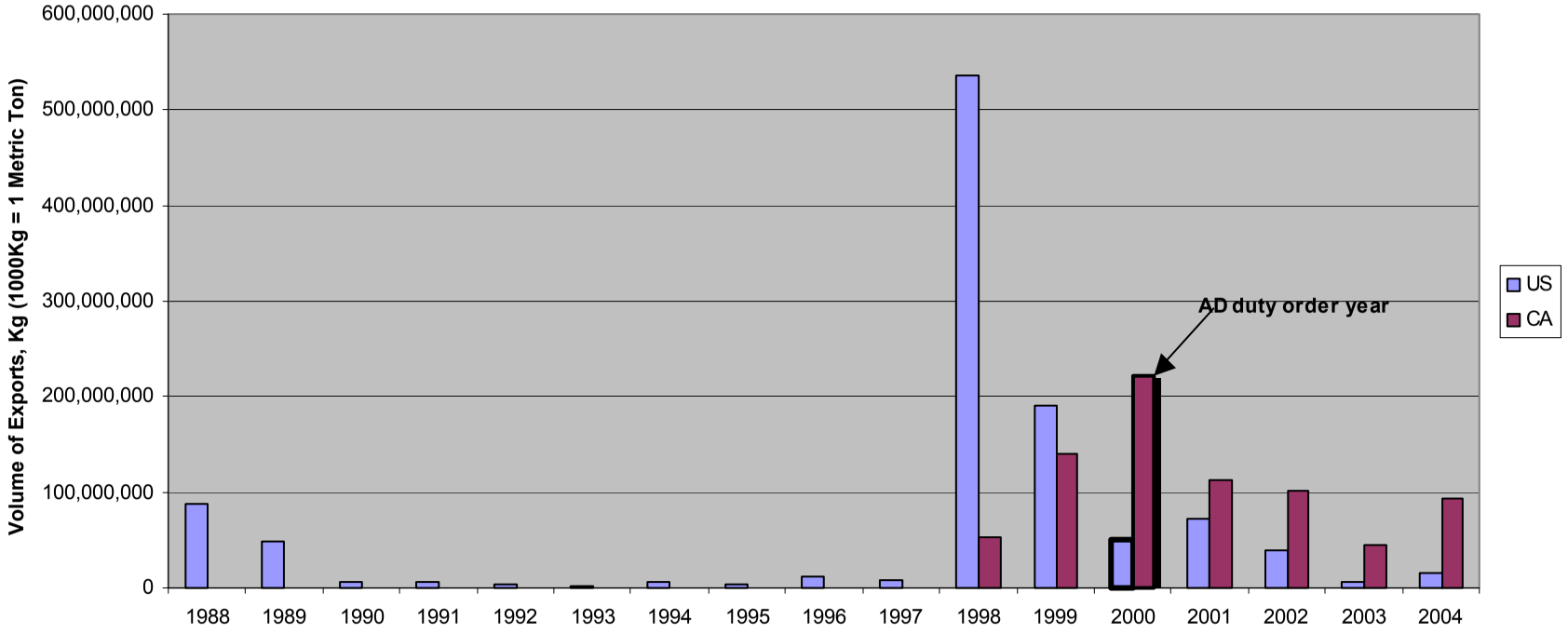


Chart 8: Trend - A-580-844

Steel Concrete Reinforcing Bars

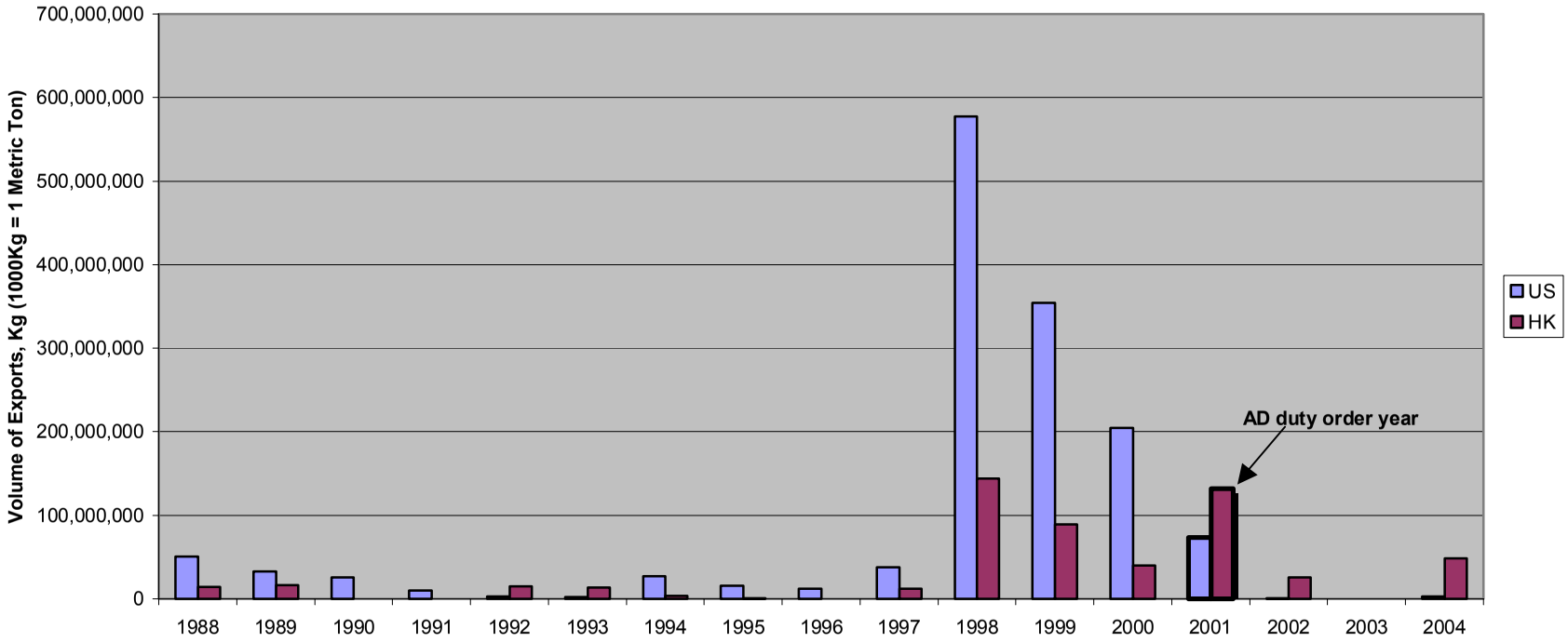


Chart 9: Trend - A-580-852

Prestressed Concrete Steel Wire Strand

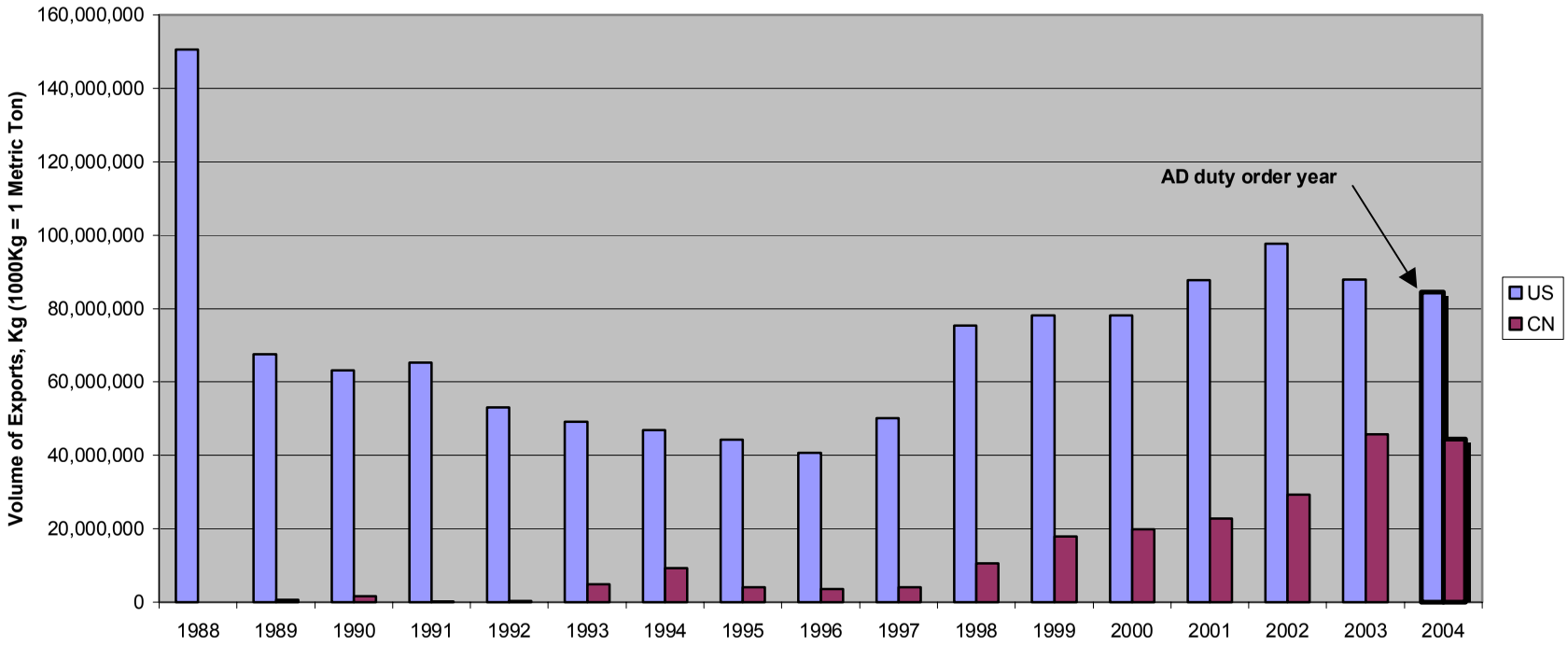


Chart 10: Trend - A-580-831

Stainless Steel Plate in Coils

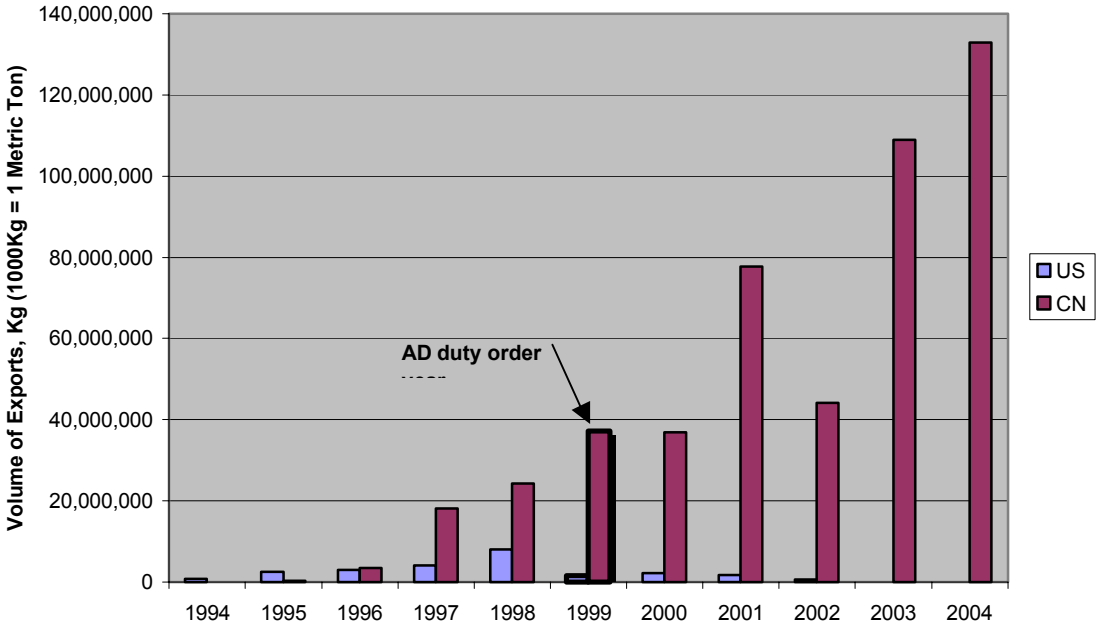


Chart 11: Trend - A-580-834

Stainless Steel Sheet and Strip in Coils

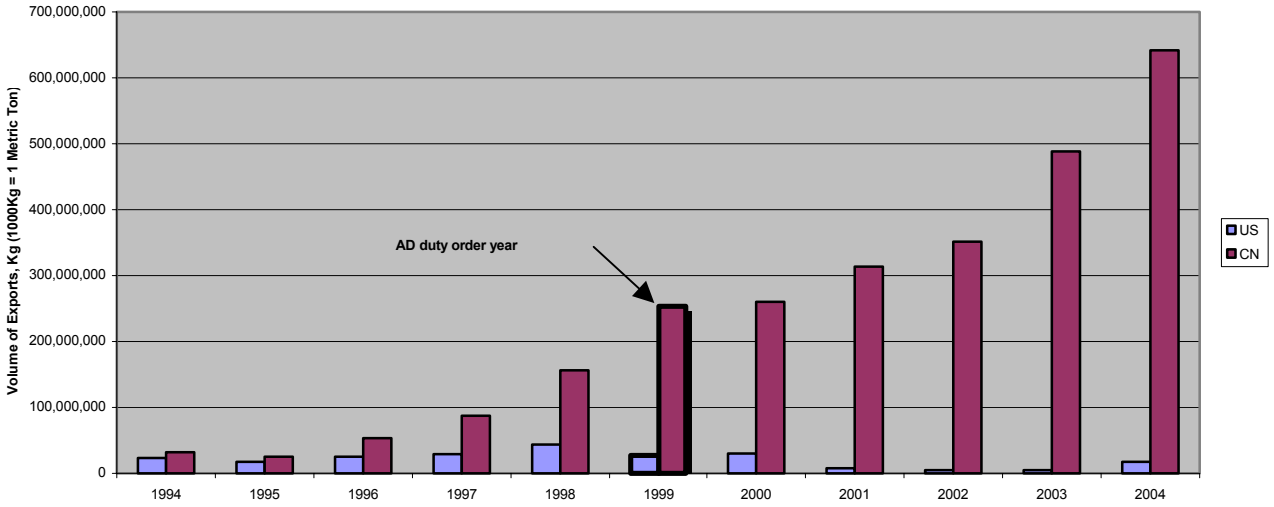


Chart 12: Trend - A-580-836

Cut-to-Length Carbon-Quality Steel Plate

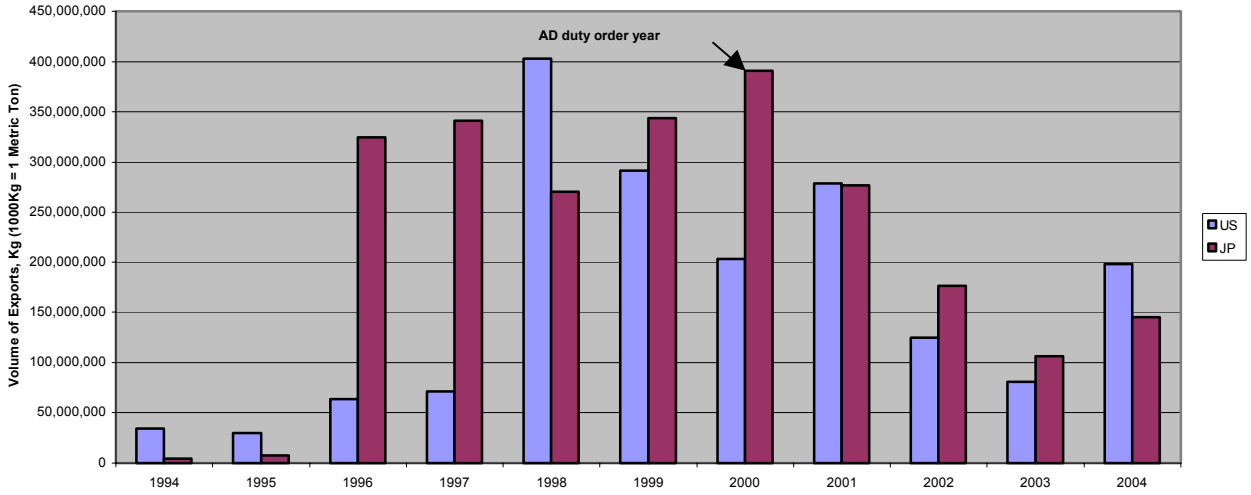
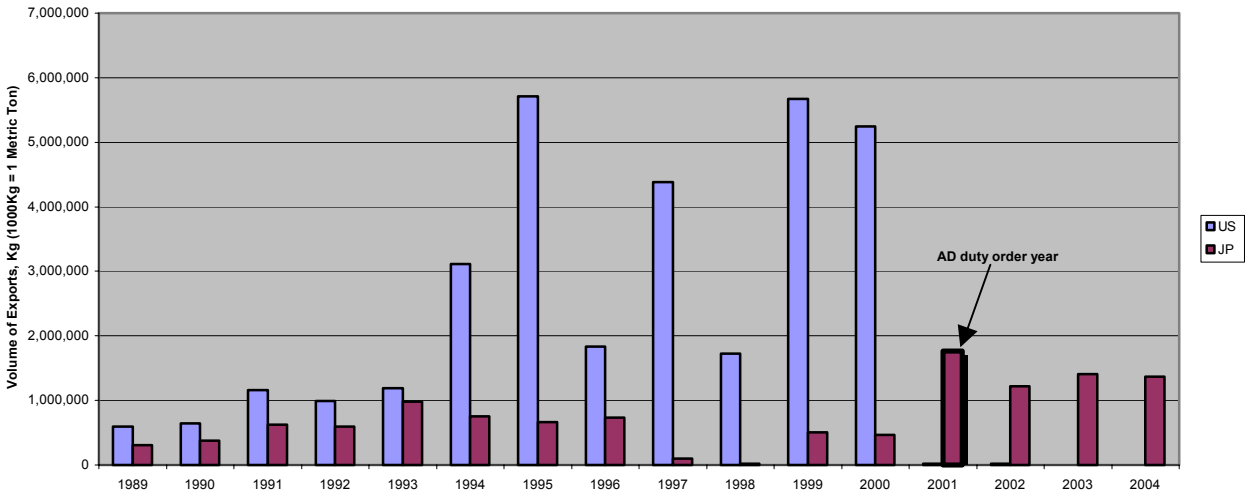
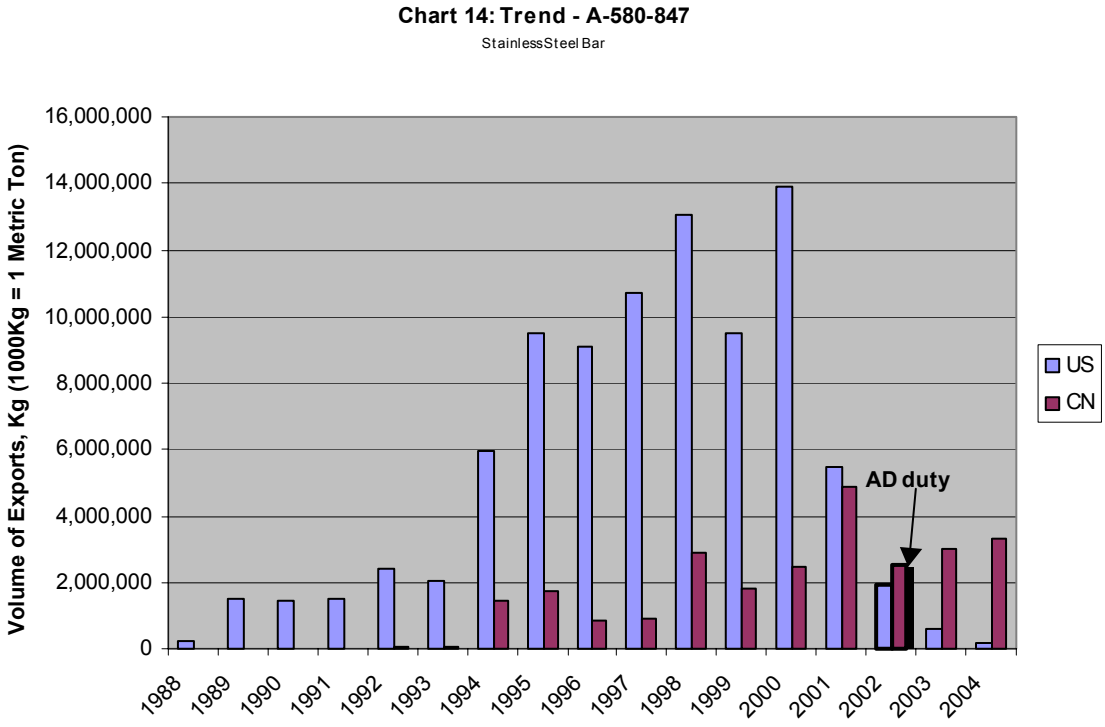


Chart 13: Trend - A-580-846

Stainless Steel Angle





Key to 'Market B'

CA: Canada
CN: China
HK: Hong Kong
JP: Japan

Table 1

DOC #	Product	*Petition*	*Prelim Find.*	*Final Find.*	*Duty Order*			
	HTS Code	**Year before Petition**	**Petition Year**	**Year after Petition**		**% change from petition year to year after**	**Company**	
A-580-831	**Stainless Steel Plate in Coils**	*4/28/1998*	*11/4/1998*	*3/31/1999*	*5/21/1999*		Pohang Iron & Steel Co., Ltd. (POSCO)	16.26%
HTS	7219.11,12,31,90*, 7220.11,20*,90*	**1997**	**1998**	**1999**			All Others	16.26%
	Total Sum (USD thousands)		$100,047	$97,993		-2.05%		
	Metric Tons		82,937	78,083		-5.85%		
	Unit value (USD)		*$1,206*	*$1,255*				
	US Sum (USD thousands)		$9,550	$2,494		-73.89%		
	US Tons		7,962	1,497		-81.20%		
	Unit value (USD)		*$1,200*	*$1,666*				
	CN Sum (USD thousands)		$25,803	$40,774		58.02%		
	CN Tons		24,281	37,123		52.89%		
	Unit value (USD)		*$1,063*	*$1,098*				
	ROW Sum (USD thousands)		$90,497	$95,499		5.53%		
	ROW Tons		74,975	76,586		2.15%		
	Unit value (USD)		*$1,207*	*$1,247*				
A-580-834	**Stainless Steel Sheet and Strip in Coils**	*7/13/1998*	*1/4/1999*	*6/8/1999*	*7/27/1999*		Pohang Iron & Steel Co., Ltd. (POSCO)	12.12%
HTS	7219.13,14,32,33,34,35,90, 7220.12,20,90	**1997**	**1998**	**1999**			Taihan Electric Wire Co., Ltd.	58.79%
	Total Sum (USD thousands)		$756,185	$777,534		2.82%	Inchon Iron & Steel Co., Ltd. (INI)	0.00%
	Metric Tons		591,141	612,078		3.54%	All Others	12.12%
	Unit value (USD)		*$1,279*	*$1,270*				
	US Sum (USD thousands)		$54,157	$40,626		-24.98%		
	US Tons		43,988	26,900		-38.85%		
	Unit value (USD)		*$1,231*	*$1,510*				
	CN Sum (USD thousands)		$195,425	$294,273		50.58%		
	CN Tons		156,225	252,722		61.77%		

Table 1 (continued)

	Unit value (USD)		*$1,251*	*$1,164*				
	ROW Sum (USD thousands)		$702,028	$736,908		4.97%		
	ROW Tons		547,153	585,178		6.95%		
	Unit value (USD)		*$1,283*	*$1,259*				
A-580-836	**Cut-to-Length Carbon-Quality Steel Plate**	*3/16/1999*	*7/29/1999*		*2/10/2000*		Dongkuk Steel Mill Co., Ltd.	2.98%
HTS	7208.51,52,53,90, 7210.70,90, 7211.90, 7212.40,50, 7215.40, 7225.40,99, 7226.91,99	**1998**	**1999**	**2000**			All Others	2.98%
	Total Sum (USD thousands)	$834,619	$720,578	$707,690		-1.79%		
	Metric Tons	1,800,400	1,565,797	1,427,943		-8.80%		
	Unit value (USD)	*$464*	*$460*	*$496*				
	US Sum (USD thousands)	$161,960	$117,881	$99,900		-15.25%		
	US Tons	402,655	291,782	203,064		-30.41%		
	Unit value (USD)	*$402*	*$404*	*$492*				
	JP Sum (USD thousands)	$92,041	$112,902	$130,158		15.28%		
	JP Tons	270,411	343,976	390,558		13.54%		
	Unit value (USD)	*$340*	*$328*	*$333*				
	ROW Sum (USD thousands)	$672,659	$602,697	$607,790		0.85%		
	ROW Tons	1,397,745	1,274,015	1,224,879		-3.86%		
	Unit value (USD)	*$481*	*$473*	*$496*				
A-580-841	**Structural Steel Beams**	*8/3/1999*			*8/18/2000*		Inchon Iron & Steel Co. (INI)	25.31%
HTS	7216.33,50,69	**1998**	**1999**	**2000**			Kangwon	49.01%
	Total Sum (USD thousands)	$337,130	$276,759	$315,529		14.01%	All Others	37.25%
	Metric Tons	1,223,118	1,170,970	1,141,022		-2.56%		
	Unit value (USD)	*$276*	*$236*	*$277*				
	US Sum (USD thousands)	$149,219	$45,005	$15,804		-64.88%		
	US Tons	536,396	190,017	50,584		-73.38%		
	Unit value (USD)	*$278*	*$237*	*$312*				
	CA Sum (USD thousands)	$14,995	$32,003	$64,461		101.42%		
	CA Tons	52,113	139,600	221,691		58.80%		
	Unit value (USD)	*$288*	*$229*	*$291*				

Table 1 (continued)

	ROW Sum (USD thousands)		$187,911	$231,754	$299,725		29.33%		
	ROW Tons		686,722	980,953	1,090,438		11.16%		
	Unit value (USD)		*$274*	*$236*	*$275*				
A-580-844	**Steel Concrete Reinforcing Bars**		*7/20/2000*	*1/30/2001*	*6/22/2001*	*9/7/2001*		Dongkuk Steel Mill Co., Ltd.	22.89%
HTS		721420	**1999**	**2000**	**2001**			Korea Iron & Steel Co., Ltd.	22.89%
	Total Sum (USD thousands)		$133,876	$57,501	$53,115		-7.63%	Hambo Iron & Steel Co., Ltd.	102.28%
	Metric Tons		656,587	278,229	257,378		-7.49%	All Others	22.89%
	Unit value (USD)		*$204*	*$207*	*$206*				
	US Sum (USD thousands)		$72,615	$41,375	$16,325		-60.54%		
	US Tons		354,476	204,574	73,539		-64.05%		
	Unit value (USD)		*$205*	*$202*	*$222*				
	HK Sum (USD thousands)		$17,788	$7,880	$25,137		219.00%		
	HK Tons		88,982	40,044	131,841		229.24%		
	Unit value (USD)		*$200*	*$197*	*$191*				
	ROW Sum (USD thousands)		$61,261	$16,126	$36,790		128.14%		
	ROW Tons		302,111	73,655	183,839		149.59%		
	Unit value (USD)		*$203*	*$219*	*$200*				
A-580-846	**Stainless Steel Angle**		*9/14/2000*	*1/12/2001*	*3/23/2001*	*5/18/2001*		Bae Myung Metal Co., Ltd.	99.56%
HTS		722240	**1999**	**2000**	**2001**			SK Global Co., Ltd.	99.56%
	Total Sum (USD thousands)		$25,279	$25,632	$13,052		-49.08%	All Others	40.21%
	Metric Tons		16,490	13,145	7,845		-40.32%		
	Unit value (USD)		*$1,533*	*$1,950*	*$1,664*				
	US Sum (USD thousands)		$8,847	$10,661	$23		-99.78%		
	US Tons		5,677	5,247	15		-99.71%		
	Unit value (USD)		*$1,558*	*$2,032*	*$1,533*				
	JP Sum (USD thousands)		$851	$962	$3,115		223.80%		
	JP Tons		504	466	1,760		277.68%		
	Unit value (USD)		*$1,688*	*$2,064*	*$1,770*				
	ROW Sum (USD thousands)		$16,432	$14,971	$13,029		-12.97%		
	ROW Tons		10,813	7,898	7,830		-0.86%		
	Unit value (USD)		*$1,520*	*$1,896*	*$1,664*				

Table 1 (continued)

A-580-847	**Stainless Steel Bar**	*1/24/2001*	*8/2/2001*	*1/23/2002*	*3/7/2002*		Changwon Specialty Steel Co., Ltd.	13.38%
HTS	7222.11, 19, 20, 30	**2000**	2001	**2002**			Dongbang Industrial Co., Ltd.	4.75%
	Total Sum (USD thousands)	$63,445	$46,307	$35,523		-23.29%	All Others	11.30%
	Metric Tons	33,479	29,785	23,271		-21.87%		
	Unit value (USD)	*$1,895*	*$1,555*	*$1,526*				
	US Sum (USD thousands)	$25,722	$9,946	$2,921		-70.63%		
	US Tons	13,908	5,474	1,932		-64.71%		
	Unit value (USD)	*$1,849*	*$1,817*	*$1,512*				
	CN Sum (USD thousands)	$4,619	$6,789	$3,998		-41.11%		
	CN Tons	2,492	4,867	2,503		-48.57%		
	Unit value (USD)	*$1,854*	*$1,395*	*$1,597*				
	ROW Sum (USD thousands)	$37,723	$36,361	$32,602		-10.34%		
	ROW Tons	19,571	24,311	21,339		-12.22%		
	Unit value (USD)	*$1,927*	*$1,496*	*$1,528*				
A-580-852	**Prestressed Concrete Steel Wire Strand**	*2/27/2003*	*7//17/2003*	*12/8/2003*	*1/28/2004*		Kiswire Ltd.	54.19%
HTS	731210	**2002**	**2003**	**2004**			Dong-Il Steel Manufacturing Co., Ltd.	54.19%
	Total Sum (USD thousands)	$298,666	$362,528	$460,488		27.02%	All Others	35.64%
	Metric Tons	244,576	264,427	283,267		7.12%		
	Unit value (USD)	*$1,221*	*$1,371*	*$1,626*				
	US Sum (USD thousands)	$101,962	$103,314	$130,743		26.55%		
	US Tons	97,626	87,875	84,486		-3.86%		
	Unit value (USD)	*$1,044*	*$1,176*	*$1,548*				
	CN Sum (USD thousands)	$53,454	$84,257	$86,170		2.27%		
	CN Tons	29,240	45,801	44,445		-2.96%		
	Unit value (USD)	*$1,828*	*$1,840*	*$1,939*				
	ROW Sum (USD thousands)	$196,704	$259,214	$329,745		27.21%		
	ROW Tons	146,950	176,552	198,781		12.59%		
	Unit value (USD)	*$1,339*	*$1,468*	*$1,659*				

Source: United States International Trade Commission, US Department of Commerce, and Korea International Trade Association

Table 1 (continued)

Key

CA	Canada	**Petition**	Date antidumping petition was filed
CN	China	**Prelim. Find.**	Date of the U.S. Department of Commerce's Preliminary Affirmative Finding
HK	Hong Kong	**Final Find.**	Date of the U.S. Department of Commerce's Final Affirmative Finding
IT	Italy	**Duty Order**	Date of duty order, as issued by U.S. ITC
JP	Japan	**HTS**	Harmonized Tariff Schedule
ROW	Rest of the World (Non-US)		

Table 2

Affirmative AD Cases in the US and Shifting Export Emphasis, Petition Year v. Following Calendar Year, *by Sales*

Case/Product	Petition Year	Final Duty Order Year	U.S. % change in export sales	% of export sales to U.S., petition year	ROW % change in export sales	Largest, non-US, market	Said mrkt % of export sales, petition year	Said mrkt % change in export sales	Size of export mrkt, petition year (US 1000)
Stainless Steel Plate in Coils	1998	1999	-73.89%	0.0955	5.53%	China	0.2579	58.02%	$100,047
Stainless Steel Sheet and Strip in Coils	1998	1999	-24.98%	0.0716	4.97%	China	0.2584	50.58%	$756,185
Cut-to-Length Carbon-Quality Steel Plate	1999	2000	-15.25%	0.1636	0.85%	Japan	0.1567	15.28%	$720,578
Structural Steel Beams	1999	2000	-64.88%	0.1626	29.33%	Canada	0.1156	101.42%	$276,759
Steel Concrete Reinforcing Bars	2000	2001	-60.54%	0.7196	128.14%	Hong Kong	0.1370	219.00%	$57,501
Stainless Steel Angle	2000	2001	-99.78%	0.4159	-12.97%	Japan	0.0375	223.80%	$25,632
Stainless Steel Bar	2001	2002	-70.63%	0.2148	-10.34%	China	0.1466	-41.11%	$46,944
Prestressed Concrete Steel Wire Strand	2003	2004	26.55%	0.2850	27.21%	China	0.2324	2.27%	$362,528

Table 2 (continued)

Affirmative AD Cases in the US and Shifting Export Emphasis, Petition Year v. Following Calendar Year, *by Volume*

Case/Product	Petition Year	Final Duty Order Year	U.S. % change in export volume	% of export volume to U.S., petition year	ROW % change in export volume	Largest, non-US, market	Said mrkt % of export volume, petition year	Said mrkt % change in export volume	Size of export mrkt, petition year (US 1000)
Stainless Steel Plate in Coils	1998	1999	-81.20%	0.0960	2.15%	China	0.2928	52.89%	$100,047
Stainless Steel Sheet and Strip in Coils	1998	1999	-38.85%	0.0744	6.95%	China	0.2643	61.77%	$756,185
Cut-to-Length Carbon-Quality Steel Plate	1999	2000	-30.41%	0.1863	-3.86%	Japan	0.2197	13.54%	$720,578
Structural Steel Beams	1999	2000	-73.38%	0.1623	11.16%	Canada	0.1192	58.80%	$276,759
Steel Concrete Reinforcing Bars	2000	2001	-64.05%	0.7353	149.59%	Hong Kong	0.1439	229.24%	$57,501
Stainless Steel Angle	2000	2001	-99.71%	0.3992	-0.86%	Japan	0.0355	277.68%	$25,632
Stainless Steel Bar	2001	2002	-64.71%	0.1838	-12.22%	China	0.1634	-48.57%	$46,944
Prestressed Concrete Steel Wire Strand	2003	2004	-3.86%	0.3323	12.59%	China	0.1732	-2.96%	$362,528

Source: United States International Trade Commission, US Department of Commerce, and Korea International Trade Association